



Pre-Algebra

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STANDARDS	PAGE REFERENCES
<p>Standard 1: Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.</p>	
<p>Grades 5-8</p>	
<p>1. demonstrate meanings for integers, rational numbers, percents, exponents, square roots, and pi (π) use physical materials and technology in problem-solving situations;</p>	<p>Student Edition: 82-83, 183-184, 206-207, 209-210, 215 #3, 234-238, 240-243, 247, 313-317, 324-325, 466-467, 504, 795, 797, 798 <i>Algebra Lab</i> 208, 462-463 <i>Cross-Curricular Project</i> 177 <i>Mid-Chapter Quiz</i> 202 #3, #4, 256 Teacher Wraparound Edition: AE 79; PA 83</p>
<p>2. read, write, and order integers, rational numbers, and common irrational numbers such as $\sqrt{2}$, $\sqrt{5}$, and π;</p>	<p>Student Edition: 78-80, 230-231, 235 #2, 259 #5, 282, 315 #6, 327, 464-467, 469-474, 504 <i>Study Tip</i> 551 Teacher Wraparound Edition: AE 79, 259; DI 80; FMC 226E</p>

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<p>3. apply number theory concepts (for example, primes, factors, multiples) to represent numbers in various ways;</p>	<p>Student Edition: 186-190, 191-195, 220-221, 257-261, 318 #72 <i>Algebra Lab</i> 262 <i>Cross-Curricular Project</i> 177 <i>Mid-Chapter Quiz</i> 202 <i>Reading Math</i> 255</p> <p>Teacher Wraparound Edition: AE 187, 192</p>
<p>4. use the relationships among fractions, decimals, and percents, include the concepts of ratio and proportion, in problem-solving situations;</p>	<p>Student Edition: 230 #4, 237 #40, #41, 282, 295, 298-300, 303-305, 308-312, 322-326, 329 #3, 339-342, 350, 795, 797, 799 <i>Algebra Lab</i> 307 <i>Mid-Chapter Quiz</i> 256 #11, 319 #15 <i>Practice Test</i> 285 #1-#6, 353 #6-#11 <i>Standardized Test Practice</i> 354 #1</p> <p>Teacher Wraparound Edition: AE 230, 304, 315, 323</p>
<p>5. develop, test, and explain conjectures about properties of integers and rational numbers; and</p>	<p>Student Edition: 43-47, 71, 88 #6, 90 #50-#51, 96 #56-#57, 102 #4, 103 #58, 124-127 <i>Algebra Lab</i> 85 #13, #14 <i>Standardized Test Practice</i> 75 #9</p> <p>Teacher Wraparound Edition: A 46; AA 119; AE 44, 125; DI 44; FMC 45, 76E; PA 128</p>
<p>6. use number sense to estimate and justify the reasonableness of solutions to problems involving integers, rational numbers, and common irrational numbers such as $\sqrt{2}$, $\sqrt{5}$, and π.</p>	<p>Student Edition: 28 #3, 41 #58, 88 #5, 89 #41, 166 #37, 215 #3, 217 #34-#36, 265 #4, 328, 331 #43, 405 #7-#9, 465 #3, 466 #4, 552 #1 <i>Algebra Lab</i> 320-321 <i>Standardized Test Practice</i> 120 #4, 224 #9</p> <p>Teacher Wraparound Edition: AE 28; DI 328</p>

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<p>Standard 2: Students use algebraic methods to explore, model, and describe patterns and functions involving numbers, shapes, data, and graphs in problem-solving situations and communicate the reasoning used in solving these problems.</p>	
<p>1. represent, describe, and analyze patterns and relationships using tables, graphs, verbal rules, and standard algebraic notation;</p>	<p>Student Edition: 27, 154 #3, 158-161, 184 #68, 203, 297-300, 357, 359-363, 365-369, 397-401 <i>Graphing Calculator Lab</i> 364 <i>Mid-Chapter Quiz</i> 48, 319 #6-#7 <i>Practice Test</i> 173 #63, 353 #5, 413 <i>Standardized Test Practice</i> 224 #6-#8, 415 #11, 456, 737 #12</p>
<p>2. describe patterns using variables, expressions, equations, and inequalities in problem-solving situations;</p>	<p>Student Edition: 40 #41-#43, 49, 158-161, 297-300, 445 #48 <i>Mid-Chapter Quiz</i> 319 <i>Standardized Test Practice</i> 121 #9, 174 #1, 224 #6-#8 Teacher Wraparound Edition: AE 159, 298; DI 125</p>
<p>3. analyze functional relationships to explain how a change in one quantity results in a change in another (for example, how the area of a circle changes as the radius increases, or how a person’s height changes over time);</p>	<p>Student Edition: 359-363, 371-375, 376-381 <i>Algebra Lab</i> 358 <i>Graphing Calculator Lab</i> 364, 390, 395 <i>Mid-Chapter Quiz</i> 382 <i>Practice Test</i> 413 #6 Teacher Wraparound Edition: A 372, 375, 377; AE 360, 361; FMC 367, 373</p>
<p>4. distinguish between linear and nonlinear functions through informal investigations; and</p>	<p>Student Edition: 720-725, 734 <i>Cross-Curricular Project</i> 623 <i>Practice Test</i> 735 #18-#20 Teacher Wraparound Edition: AE 721, 722; DI 721; PA 725</p>
<p>5. solve simple linear equations in problem-solving situations using a variety of methods (informal, formal, graphical) and a variety of tools (physical materials, calculators, computers).</p>	<p>Student Edition: 365-369, 375 #17-#19, 381 #24-#26, 397-402, 409 <i>Graphing Calculator Lab</i> 395-396 <i>Mid-Chapter Quiz</i> 382 #8-#10 <i>Practice Test</i> 413 #8-#9 <i>Standardized Test Practice</i> 414 #1 Teacher Wraparound Edition: AE 367; PA 369; TNT 366</p>

STANDARDS	PAGE REFERENCES
<p>Standard 3: Students use data collection and analysis, statistics, and probability in problem-solving situations and communicate the reasoning used in solving these problems.</p>	
<p>1. read and construct displays of data using appropriate techniques (for example, line graphs, circle graphs, scatter plots, box plots, stem-and-leaf plots) and appropriate technology;</p>	<p>Student Edition: 61-66, 72, 213 #75-#76, 325 #27-#28, 388 #21-#23, 555 #27-#29, 626-631, 638-642, 651-656, 759, 805 <i>Algebra Lab</i> 60 <i>Cross-Curricular Project</i> 23, 167, 623 <i>Graphing Calculator Lab</i> 67-68, 632, 643 <i>Mid-Chapter Quiz</i> 658 <i>Practice Test</i> 73 #16, 413 #19 <i>Spreadsheet Lab</i> 557, 657 <i>Standardized Test Practice</i> 75 #13, 287 #10 Teacher Wraparound Edition: AE 62, 627, 639, 652, 653; DI 652</p>
<p>2. display and use measures of central tendency, such as mean, median, and mode, and measures of variability, such as range and quartiles;</p>	<p>Student Edition: 274-279, 296 #54, 628 #3-#4, 629 #15, 630 #27-#29, 633-637, 638-639, 798 #12-#14 <i>Graphing Calculator Lab</i> 280, 643 <i>Practice Test</i> 285 <i>Standardized Test Practice</i> 286-287 Teacher Wraparound Edition: AE 275, 276; FMC 277; PA 279</p>
<p>3. evaluate arguments that are based on statistical claims;</p>	<p>Student Edition: 63 #2, 127 #45-#47, 629 #16, 660-663 <i>Algebra Lab</i> 60, 273 <i>Cross-Curricular Project</i> 23, 289, 623 <i>Graphing Calculator Lab</i> 643 <i>Reading Math</i> 664 Teacher Wraparound Edition: AE 661</p>

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4. formulate hypotheses, draw conclusions, and make convincing arguments based on data analysis;	<p>Student Edition: 64 #5, 65 #20-#23, 207 #65, 213 #75-#76, 343-347, 363 #37, 641 #14, 660-663 <i>Algebra Lab</i> 60, 273 <i>Cross-Curricular Project</i> 23, 289, 623 <i>Graphing Calculator Lab</i> 67-68, 643 <i>Practice Test</i> 695 #12 <i>Standardized Test Practice</i> 74 #3, 696 #1</p> <p>Teacher Wraparound Edition: PA 66; T 61</p>
5. determine probabilities through experiments or simulations;	<p>Student Edition: 665-669, 693 <i>Algebra Lab</i> 307, 688-689 <i>Cross-Curricular Project</i> 623 <i>Graphing Calculator Lab</i> 681 <i>Spreadsheet Lab</i> 557</p> <p>Teacher Wraparound Edition: AE 666; PA 669</p>
6. make predictions and compare results using both experimental and theoretical probability drawn from real-world problems; and	<p>Student Edition: 666-667 <i>Algebra Lab</i> 688-689 <i>Graphing Calculator Lab</i> 681 <i>Spreadsheet Lab</i> 557</p>
7. use counting strategies to determine all the possible outcomes from an experiment (for example, the number of ways students can line up to have their picture taken).	<p>Student Edition: 666-669, 670-674, 676-680, 694, 805 <i>Algebra Lab</i> 675, 688-689</p> <p>Teacher Wraparound Edition: A 669; Ae 671; DI 671; FMC 677</p>
<p>Standard 4: Students use geometric concepts, properties, and relationships in problem-solving situations and communicate the reasoning used in solving these problems.</p>	
1. construct two- and three-dimensional models using a variety of materials and tools;	<p>Student Edition: 480-481, 497, 535 #25-#26, 550 #31, 577, 578 #4-#5, 579 #13, 807 <i>Geometry Lab</i> 574</p> <p>Teacher Wraparound Edition: AE 577; DI 546, 577; TNT 547</p>

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<p>2. describe, analyze, and reason informally about the properties (for example, parallelism, perpendicularity, congruence) of two- and three-dimensional figures ;</p>	<p>Student Edition: 502 #25, 506, 512, 514, 517 #36, 518-523, 529 #27, 543 #31, 580 #20-#23 <i>Cross-Curricular Project</i> 459 <i>Reading Math</i> 478 Teacher Wraparound Edition: AA 619; AE 519; DI 577; I 576; PA 502</p>
<p>3. apply the concepts of ratio, proportion, and similarity in problem-solving situations;</p>	<p>Student Edition: 308-312, 350, 497-502, 518-523, 536 #35-#36, 608-613, 618, 637 #25-#26, 802 #11, 803 #1 <i>Practice Test</i> 507 #20, 619 <i>Standardized Test Practice</i> 508 #1, 620 #4 Teacher Wraparound Edition: AA 507, 619; AE 498, 499, 609; PA 502, 523</p>
<p>4. solve problems using coordinate geometry;</p>	<p>Student Edition: 492-496, 502 #31-#33, 524-530 <i>Geometry Lab</i> 531 <i>Practice Test</i> 507 #17-#19 Teacher Wraparound Edition: AE 493, 494, 525, 526</p>
<p>5. solve problems involving perimeter and area in two dimensions, and involving surface area and volume in three dimensions; and</p>	<p>Student Edition: 163-166, 172, 183 #59-#60, 184 #63-#65, 200 #55, 312 #20-#21, 547-550, 559, 585-587, 589-594, 597-601, 602-606, 610 #4, 616-617, 804 <i>Geometry Lab</i> 582 <i>Mid-Chapter Quiz</i> 595 <i>Practice Test</i> 455 #12 <i>Spreadsheet Lab</i> 168, 563 Teacher Wraparound Edition: AE 163, 547, 585, 603, 604; PA 543</p>
<p>6. transform geometric figures using reflections, translations, and rotations to explore congruence.</p>	<p>Student Edition: 524-530, 536 #34, 543 #41, 566 <i>Geometry Lab</i> 531, 544 <i>Standardized Test Practice</i> 571 #12 Teacher Wraparound Edition: AE 527; DI 525; PA 530</p>

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<p>Standard 5: Students use a variety of tools and techniques to measure, apply the results in problem-solving situations, and communicate the reasoning used in solving these problems.</p>	
<p>1. estimate, use, and describe measures of distance, perimeter, area, volume, capacity, weight, mass, and angle comparison;</p>	<p>Student Edition: 51 #8-#9, 53 #35, 166 #39, 212 #47, 242 #17, 330 #37, 548 #4, 560 #2, 587 #29, 601 #25, 757-758 <i>Geometry Lab</i> 582 <i>Standardized Test Practice</i> 621 #10-#11, 697 #8 Teacher Wraparound Edition: A 167; AE 163; DI 514; PA 588; TNT 163</p>
<p>2. estimate, make, and use direct and indirect measurements to describe and make comparisons;</p>	<p>Student Edition: 298 #2, 300 #18, 303-306, 308-312, 324 #4, 497-502, 802 <i>Algebra Lab</i> 307 <i>Reading Math</i> 301 <i>Practice Test</i> 507 #20 Teacher Wraparound Edition: AA 507; AE 304, 499; DI 499</p>
<p>3. read and interpret various scales including those based on number lines, graphs, and maps;</p>	<p>Student Edition: 308-312, 326 #42, 350, 799 #6 <i>Mid-Chapter Quiz</i> 319 #13-#14 <i>Practice Test</i> 353 #23, 507 #20 Teacher Wraparound Edition: AE 309; DI 309; FMC 309; PA 312</p>
<p>4. develop and use formulas and procedures to solve problems involving measurement;</p>	<p>Student Edition: 109 #30-#31, 162-167, 271 #41, 468 #61, 473 #52-#53, 494 #3, 548 #4, 552 #2, 560 #2, 584 #3, 591 #4 <i>Cross-Curricular Project</i> 23 Teacher Wraparound Edition: AE 163, 585</p>
<p>5. describe how a change in an object's linear dimensions affects its perimeter, area, and volume; and</p>	<p>Student Edition: 295 #40, 501 #20-#23, 520 #3, 523 #29 <i>Geometry Lab</i> 582 <i>Graphing Geometric Relationship</i> 807-808 <i>Practice Test</i> 569 #7-#8, 619 #14 <i>Spreadsheet Lab</i> 563 Teacher Wraparound Edition: DI 590</p>

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6. select and use appropriate units and tools to measure to the degree of accuracy required in a particular problem-solving situation.	Student Edition: 210, 211 #9, #34-#36, 230 #4, 236 #4, 244 #76 <i>Algebra Lab</i> 307 <i>Reading Math</i> 614
Standard 6: Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving situations and communicate the reasoning used in solving these problems.	
1. use models to explain how ratios, proportions, and percents can be used to solve real-world problems;	Student Edition: 292-296, 302-306, 308-312, 315, 322-326, 610-611 #4 <i>Algebra Lab</i> 307, 320-321 <i>Reading Math</i> 301 <i>Mid-Chapter Quiz</i> 319 #11-#16 <i>Practice Test</i> 353
2. construct, use, and explain procedures to compute and estimate with whole numbers, fractions, decimals, and integers;	Student Edition: 89 #41, 166 #37-#38, 215 #3, 217 #36, 237 #49, 265 #4, 304 #3, 328, 331 #43, 401 #36, 405 #8-#9, 467 #29-#30, 486 #3, 802 #2, 804 #4 <i>Graphing Calculator Lab</i> 643 <i>Practice Test</i> 173 #21 <i>Standardized Test Practice</i> 120 #4, 224 #9, 737 Teacher Wraparound Edition: DI 328
3. develop, apply, and explain a variety of different estimation strategies in problem-solving situations, and explain why an estimate may be acceptable in place of an exact answer; and	Student Edition: 28 #3, 88 #5, 94 #3, 154 #3, 467 #29-#30, 610-611 #4 <i>Algebra Lab</i> 320-321 <i>Mid-Chapter Quiz</i> 173 #21 <i>Standardized Test Practice</i> 120 #4
4. select and use appropriate algorithms for computing with commonly used fractions and decimals, percents, and integers in problem-solving and determine whether the results are reasonable.	Student Edition: 88 #5, 89 #41, 94 #3, 154 #3, 215 #3, 237 #49, 250 #1, 251 #2, 265 #4, 405 #8-#9, 744, 746, 752 <i>Practice Test</i> 173 #21 <i>Standardized Test Practice</i> 120 #4 Teacher Wraparound Edition: PA 90; PC 178H, 226H